CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/KRIDL/W.No.13/BC/Agg/2017-18 13.01.2018

TEST REPORT ON GRADATION OF AGGREGATE

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	:	Improvements to Roads and asphalting at pipeline road right side and other roads in Mllasandra Ward No.13 in Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/146/2017-18 Dated: 21.12.2017
* Sample ID	:	Bituminous Concrete
Technical Reference	:	IS : 2386(Part -1)-1963 (RA-2011)
* Type of Mix	:	Hot mix plant, Bangalore
Date of Testing	:	13.01.2018

Total Weight of Sample: **5100** gm

Sieve Size, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per `MORTH 500-18
13.2	735	14.41	14.41	85.59	79 - 100	
9.5	575	11.27	25.69	74.31	70 - 88	
4.75	660	12.94	38.63	61.37	53 - 71	
2.36	540	10.59	49.22	50.78	42 - 58	
1.18	530	10.39	59.61	40.39	34 - 48	
0.600	590	11.57	71.18	28.82	26 - 38	
0.300	455	8.92	80.10	19.90	18 - 28	
0.150	285	5.59	85.69	14.31	12 - 20	
0.075	390	7.65	93.33	6.67	4 - 10	

Total Weight of Sample: **5200** gm

Sieve Size, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH 500-18
13.2	595	11.44	11.44	88.56	79 - 100	
9.5	630	12.12	23.56	76.44	70 - 88	
4.75	625	12.02	35.58	64.42	53 - 71	
2.36	585	11.25	46.83	53.17	42 - 58	
1.18	610	11.73	58.56	41.44	34 - 48	
0.600	515	9.90	68.46	31.54	26 - 38	
0.300	530	10.19	78.65	21.35	18 - 28	
0.150	355	6.83	85.48	14.52	12 - 20	
0.075	475	9.13	94.62	5.38	4 - 10	

*Information is furnished by the Customer/Representative.

Note:

⇒The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒Any Query regarding the report must be reported within 30 days from the date of testing.

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BC/Stability/2017-18 13.01.2018

TEST REPORT ON MARSHALL STABILITY OF MIX

*** Customer**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Technical Manager (West),** KRIDL, Bangalore.
***Name of the Work**	:	Improvements to Roads and asphalting at pipeline road right side and other roads in Mllasandra Ward No.13 in Shettyhalli Sub Division, BBMP, Bangalore.
***Reference**	:	BBMP/EE/DD/WO/146/2017-18 Dated: 21.12.2017
*** Source**	:	Hot mix Plant, Bangalore
*** Type of Mix**	:	Bituminous Concrete
Date of Testing	:	13.01.2018

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshall Stability (Kn at 60°C)	9.55	9.80	9 Kn (min)
2	Marshall flow (mm)	3.25	3.60	2 – 4
3	Voids in Compacted Mix %	3.15	4.05	3 – 6
4	Percent voids in Mineral Aggregate (VMA)	13.25	14.60	13 - 15
5	Percent Voids filled with Bitumen (VFB)	66.50	67.85	65 - 75
6	Density, g/cc	2.27	2.28	--

*Information is furnished by the Customer/Representative.

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